

Supporting Information

Cross-Dehydrogenative regioselective Csp³-Csp² coupling mode of enamino-ketones followed by Rearrangement, An amazing formation route to Acridine-1,8-diones derivatives

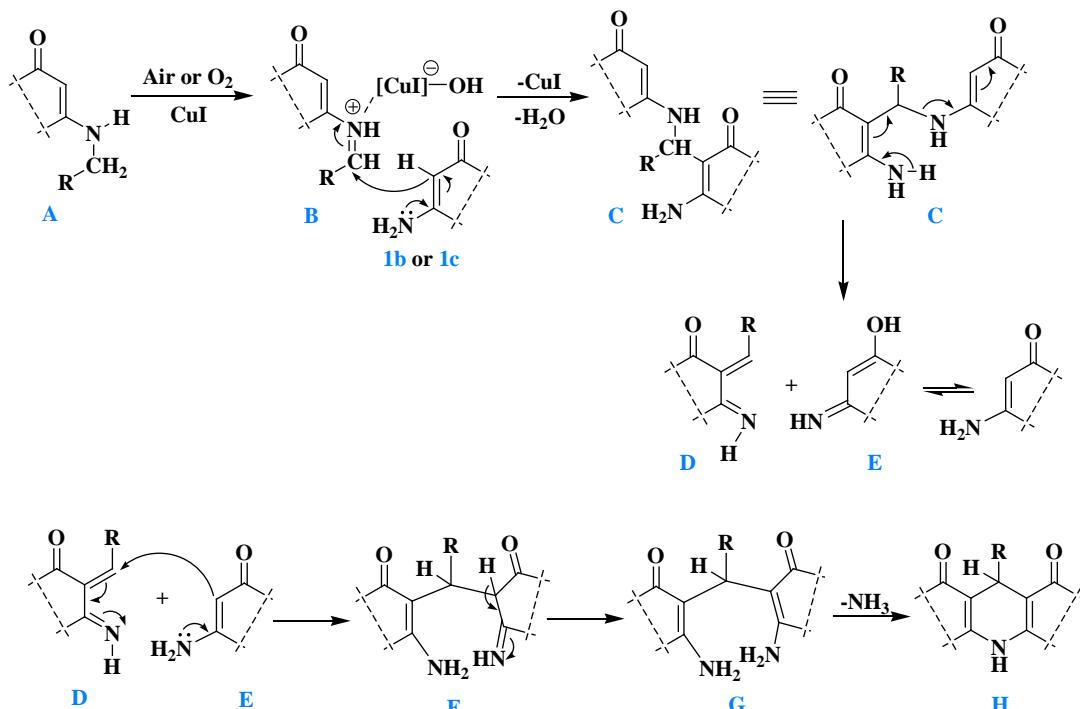
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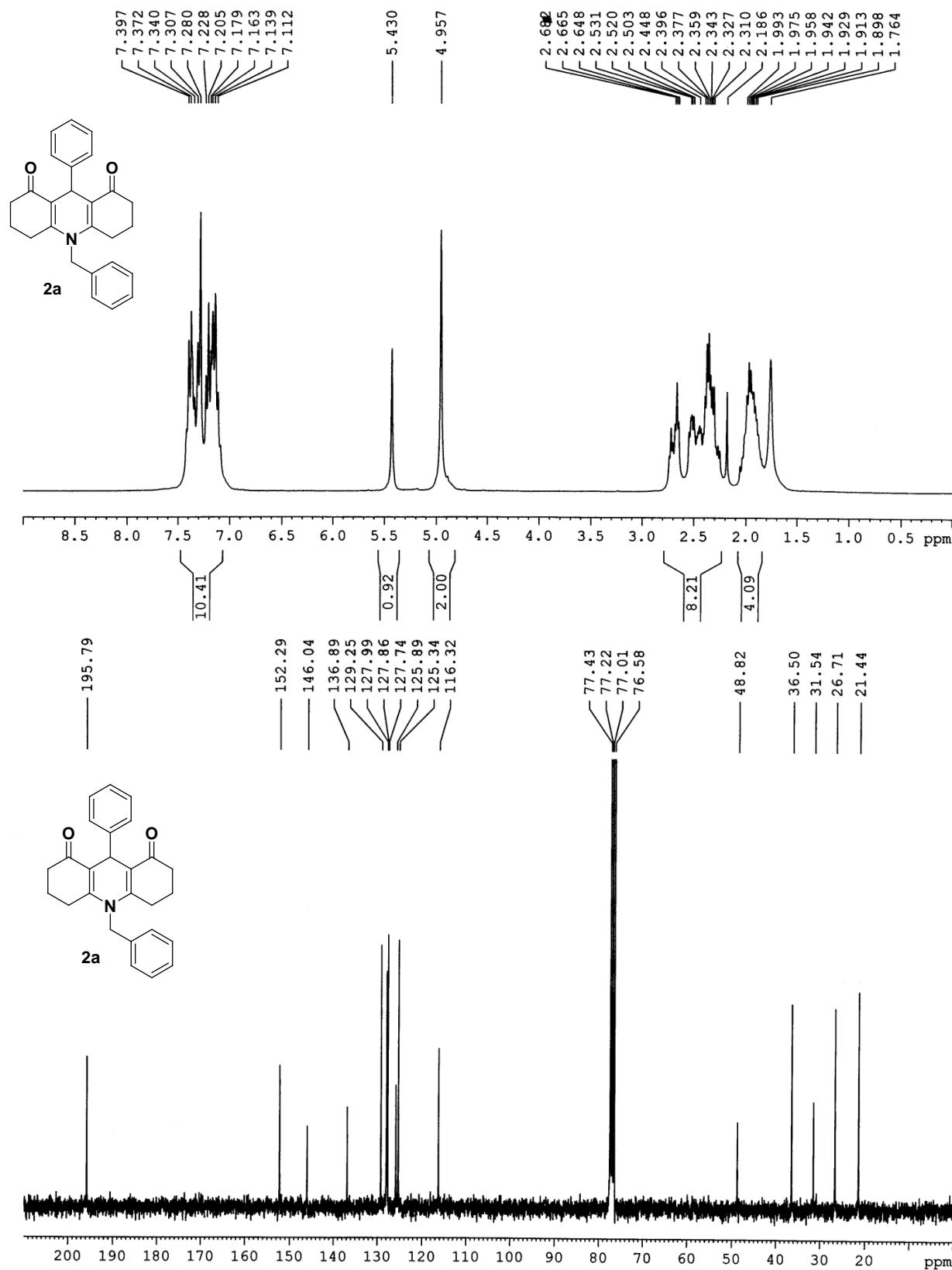
Formation mechanism of Acridine-1,8-diones, 3a-3j:



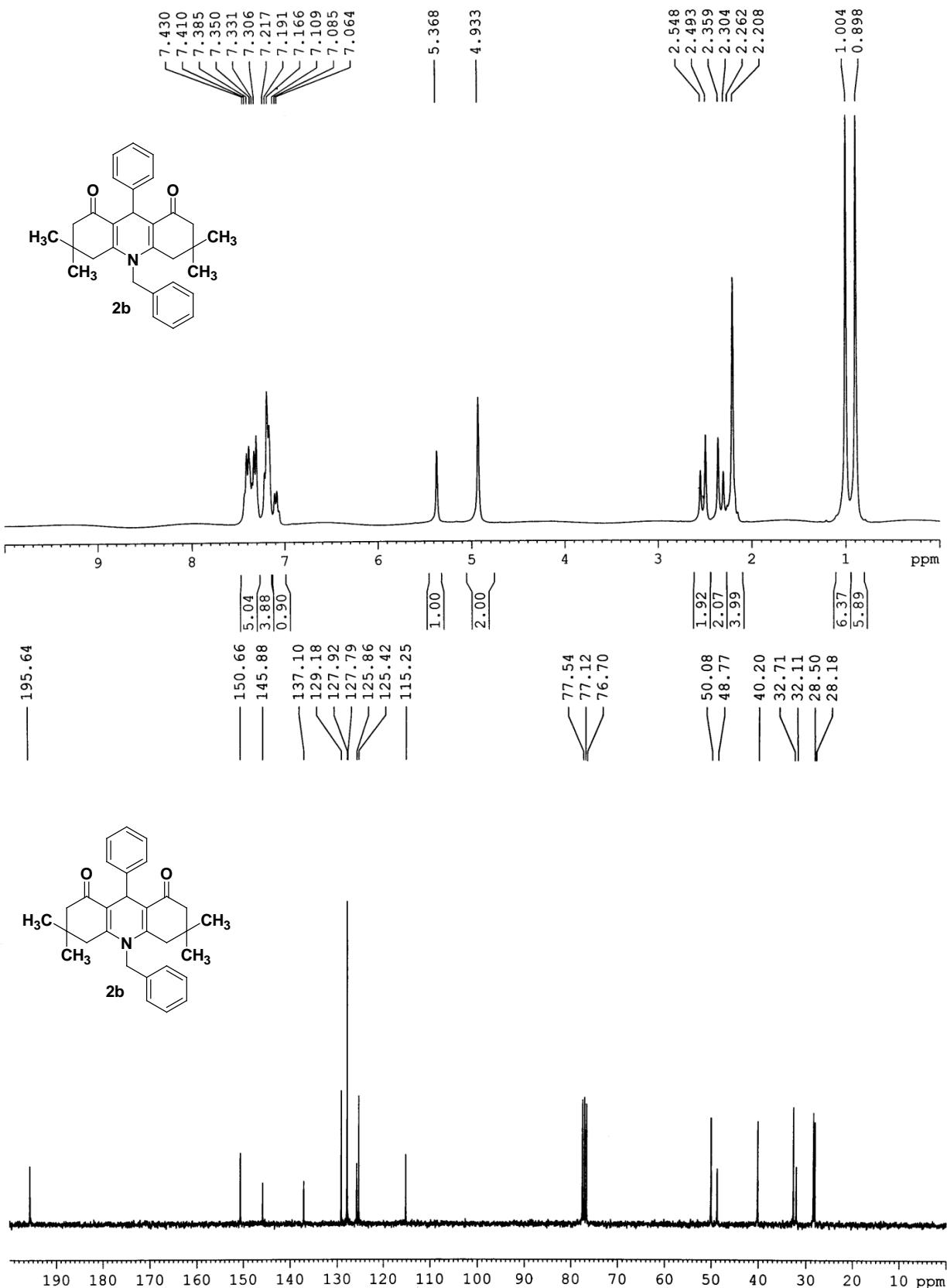
Scheme S1. Plausible formation mechanism of Acridine-1,8-diones (3a-3j)

A most plausible formation mechanism of the acridine-1,8-dione derivatives (3a-3j) has been proposed in Scheme S1. Initially, in presence of air or oxygen and CuBr, Friedel-Crafts-type CDC reaction between **A** and **1b** or **1c** provides the intermediate **C** via in situ generated intermediate **B**. Then, intermediate **C** decomposes to two moieties **D** and **E**. After that, nucleophilic attack of **E** to intermediate **D** furnishes the adduct **F**, which readily tautomerise to **G**. Finally elimination of one molecule of ammonia from the **G** produces the ultimate product **H**.

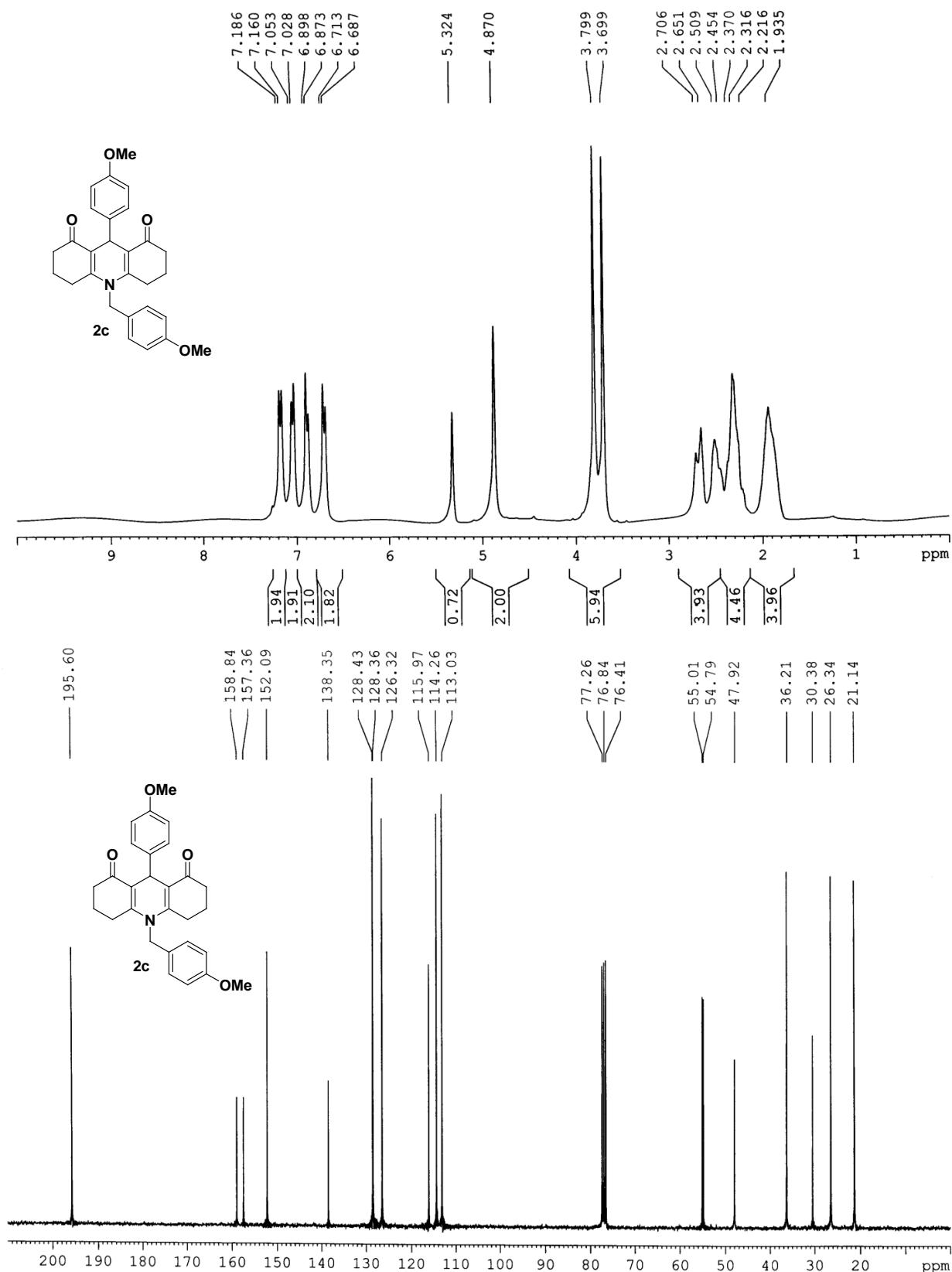
¹H NMR and ¹³C NMR spectra of **2a**



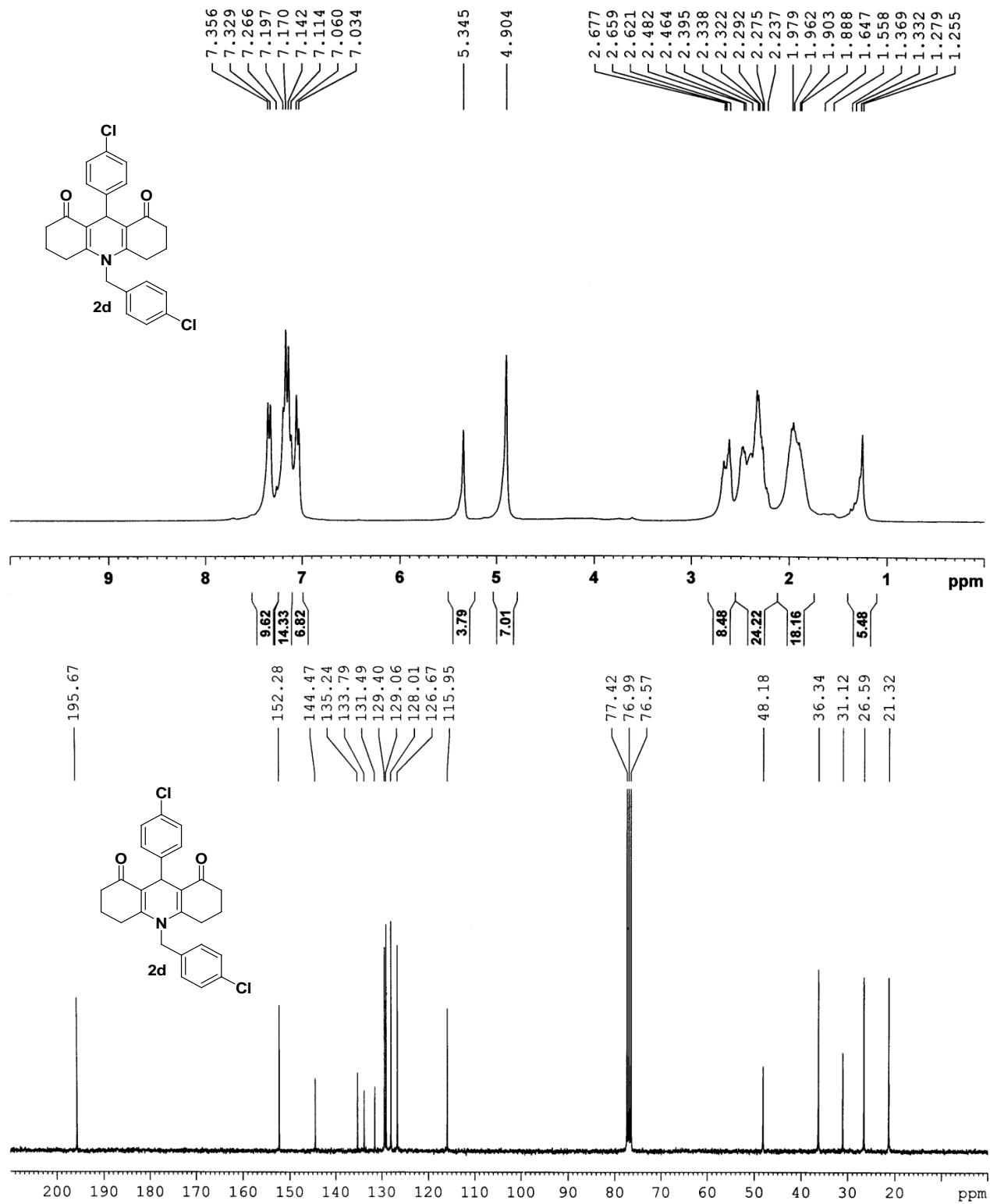
¹H NMR and ¹³C NMR spectra of **2b**



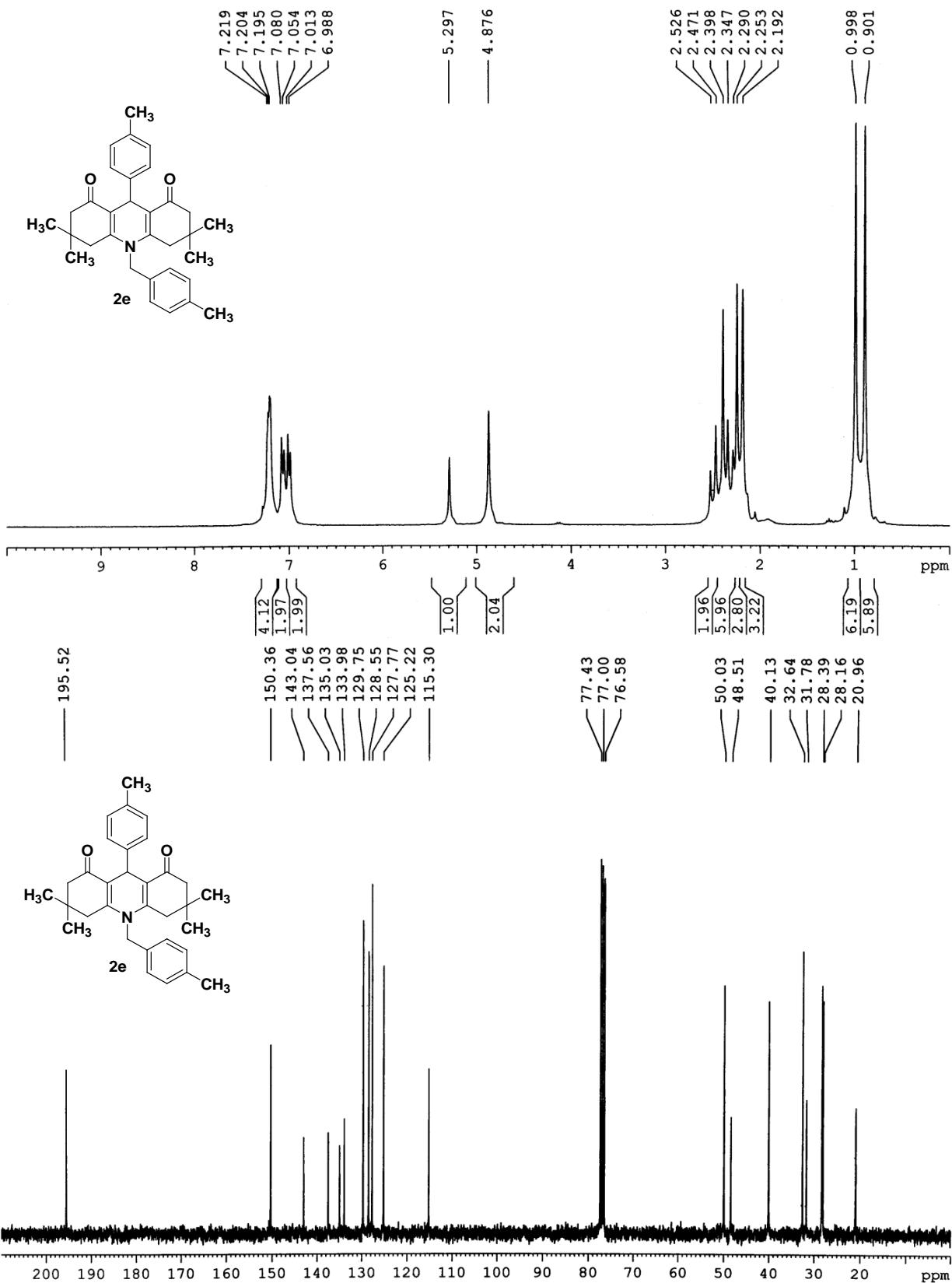
¹H NMR and ¹³C NMR spectra of **2c**



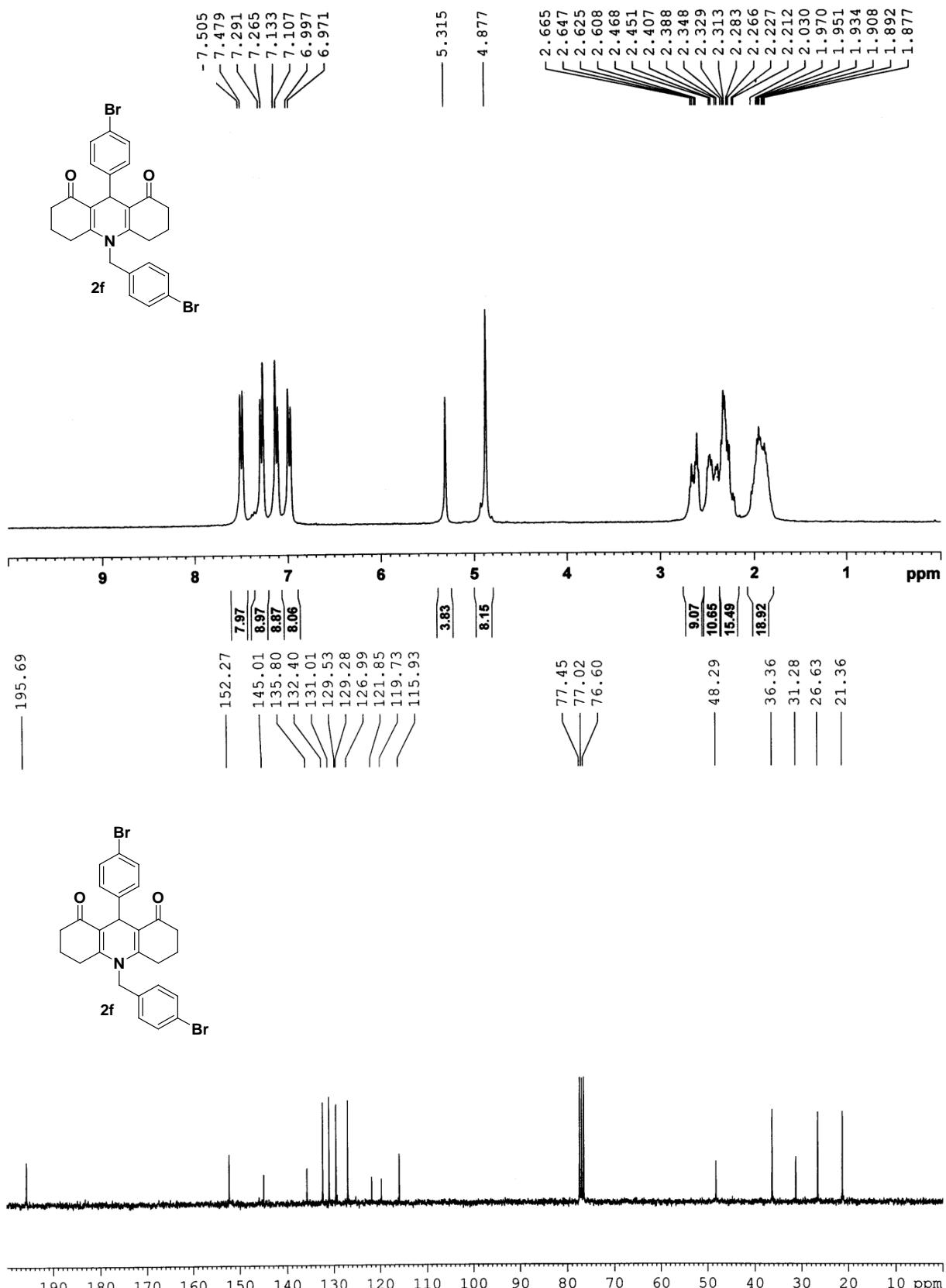
¹H NMR and ¹³C NMR spectra of **2d**



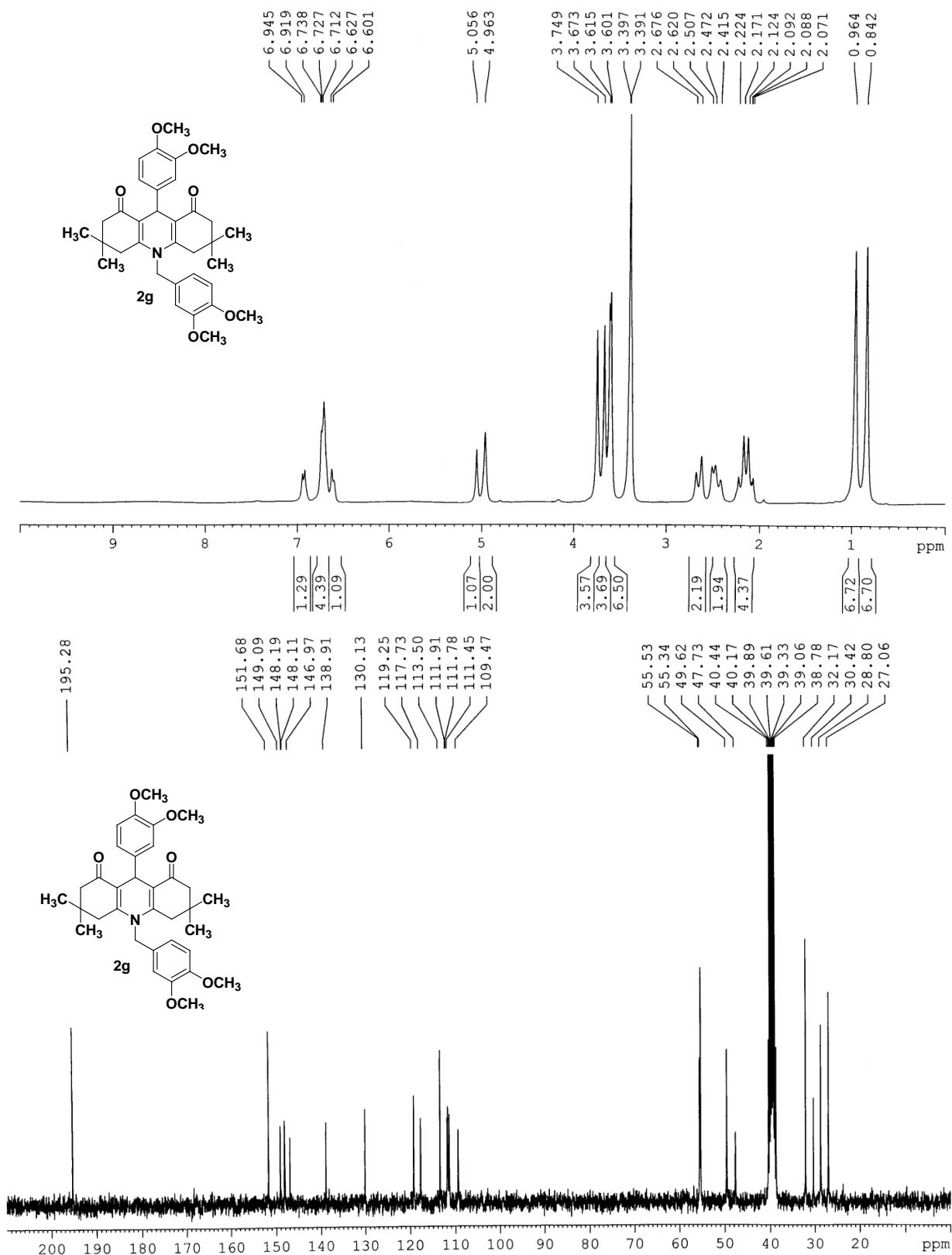
¹H NMR and ¹³C NMR spectra of **2e**



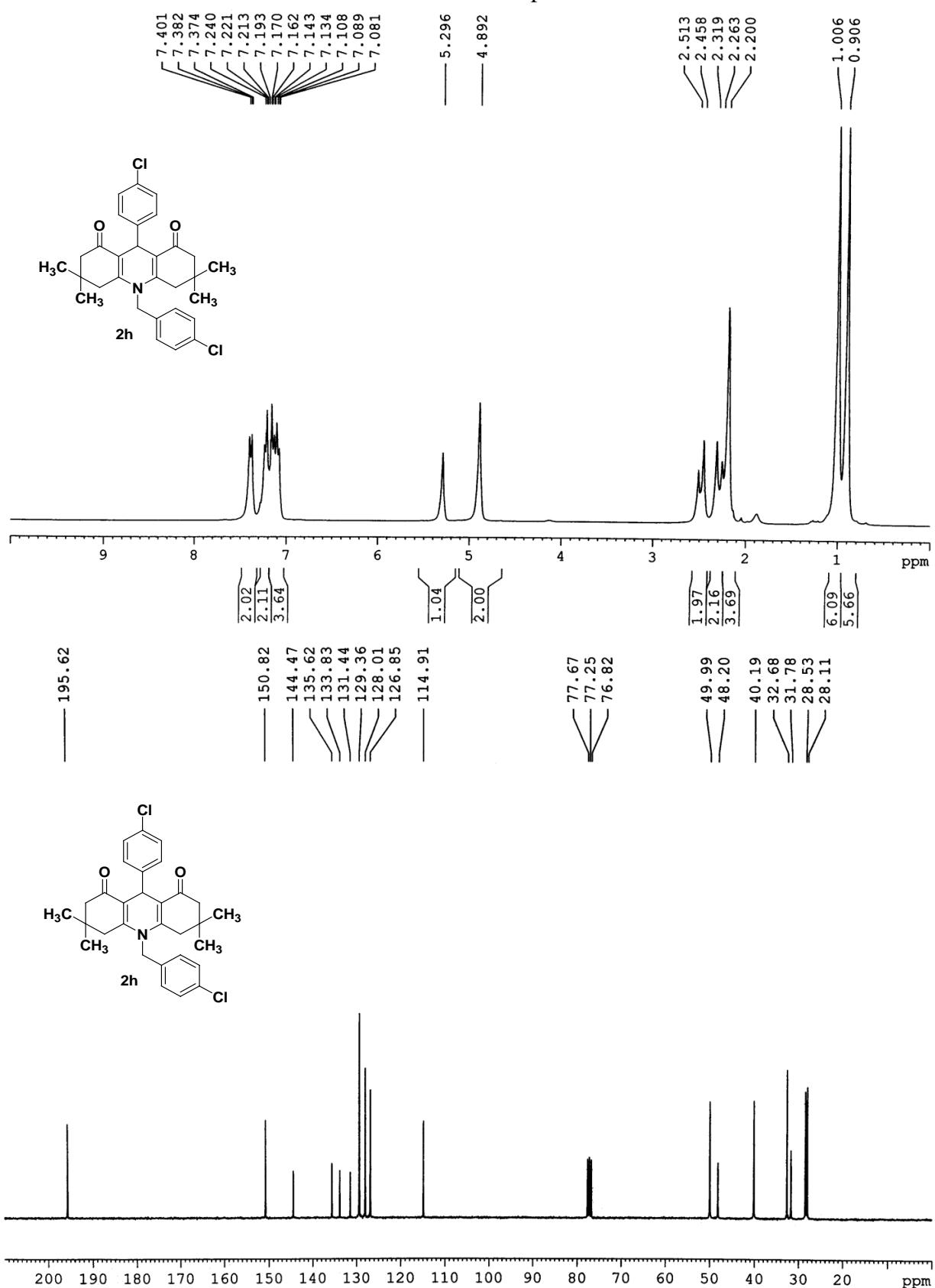
¹H NMR and ¹³C NMR spectra of **2f**



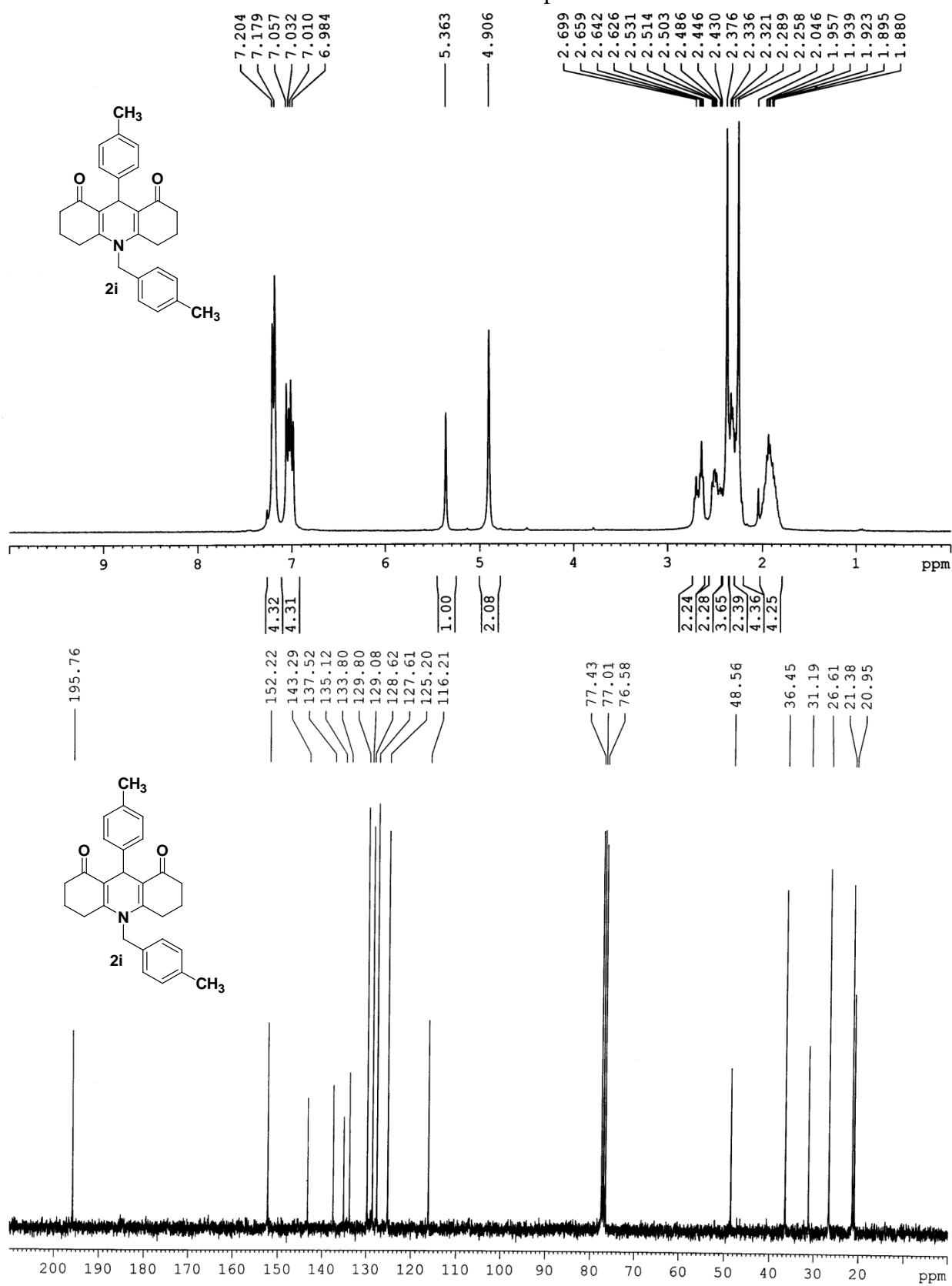
¹H NMR and ¹³C NMR spectra of **2g**



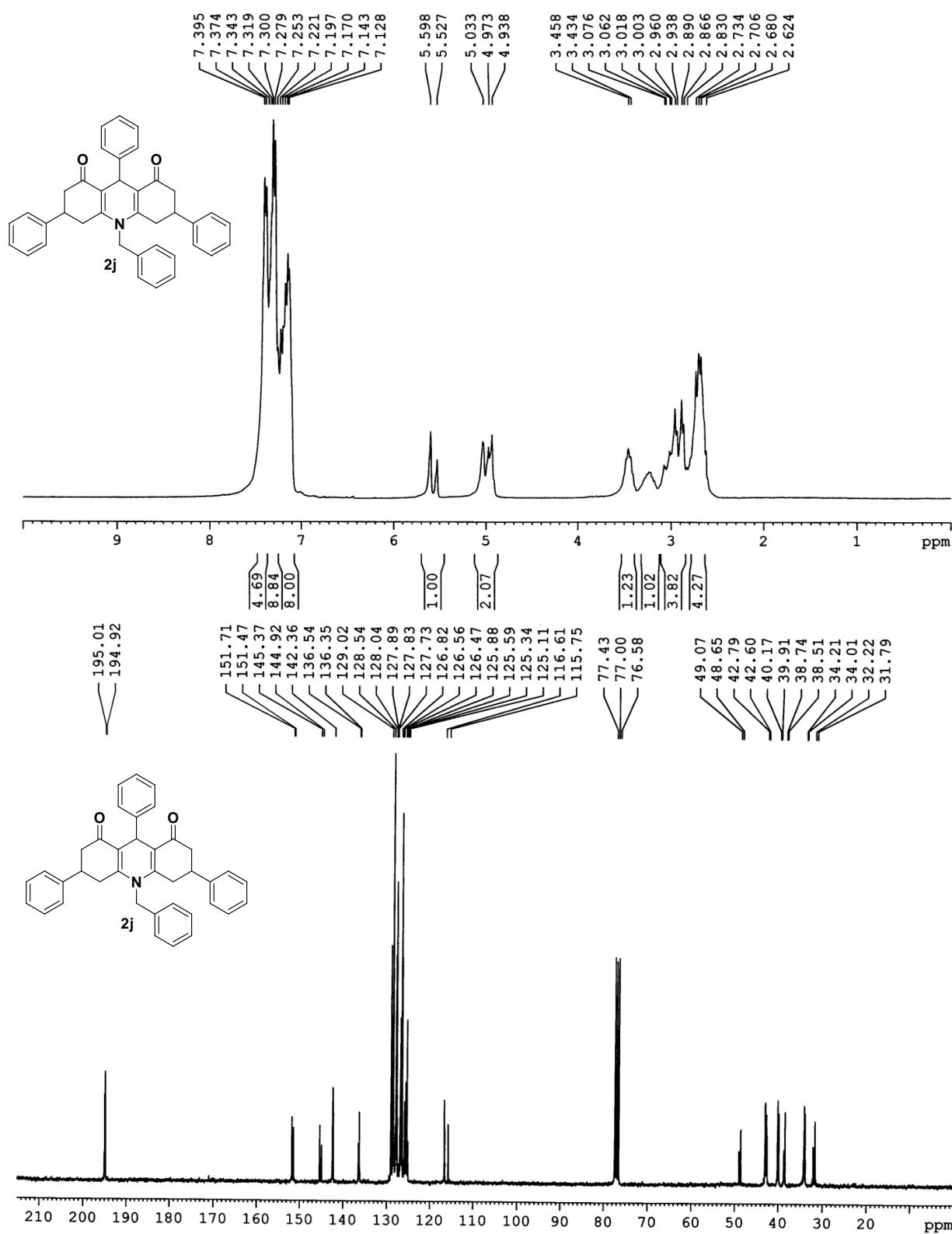
¹H NMR and ¹³C NMR spectra of **2h**



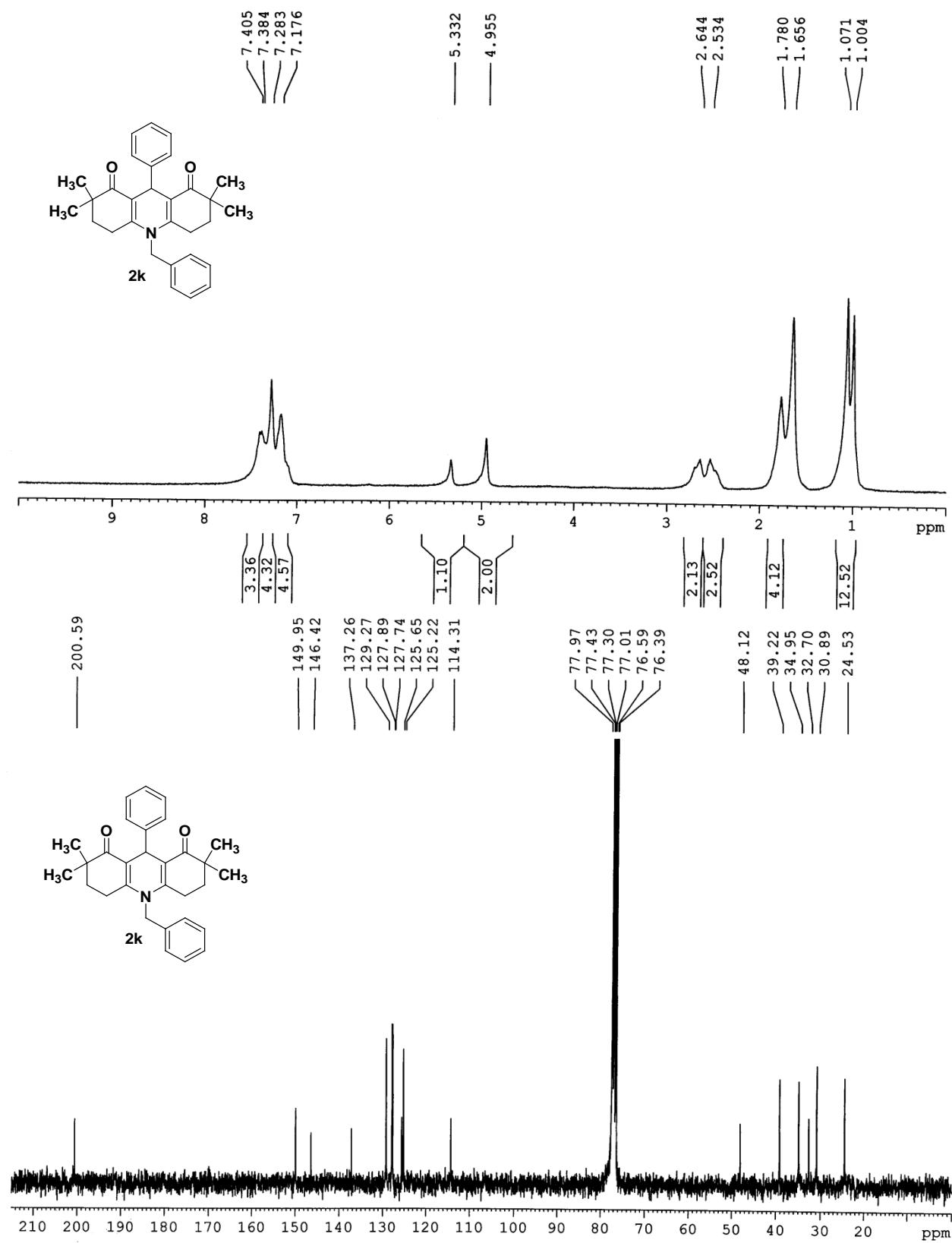
¹H NMR and ¹³C NMR spectra of **2i**



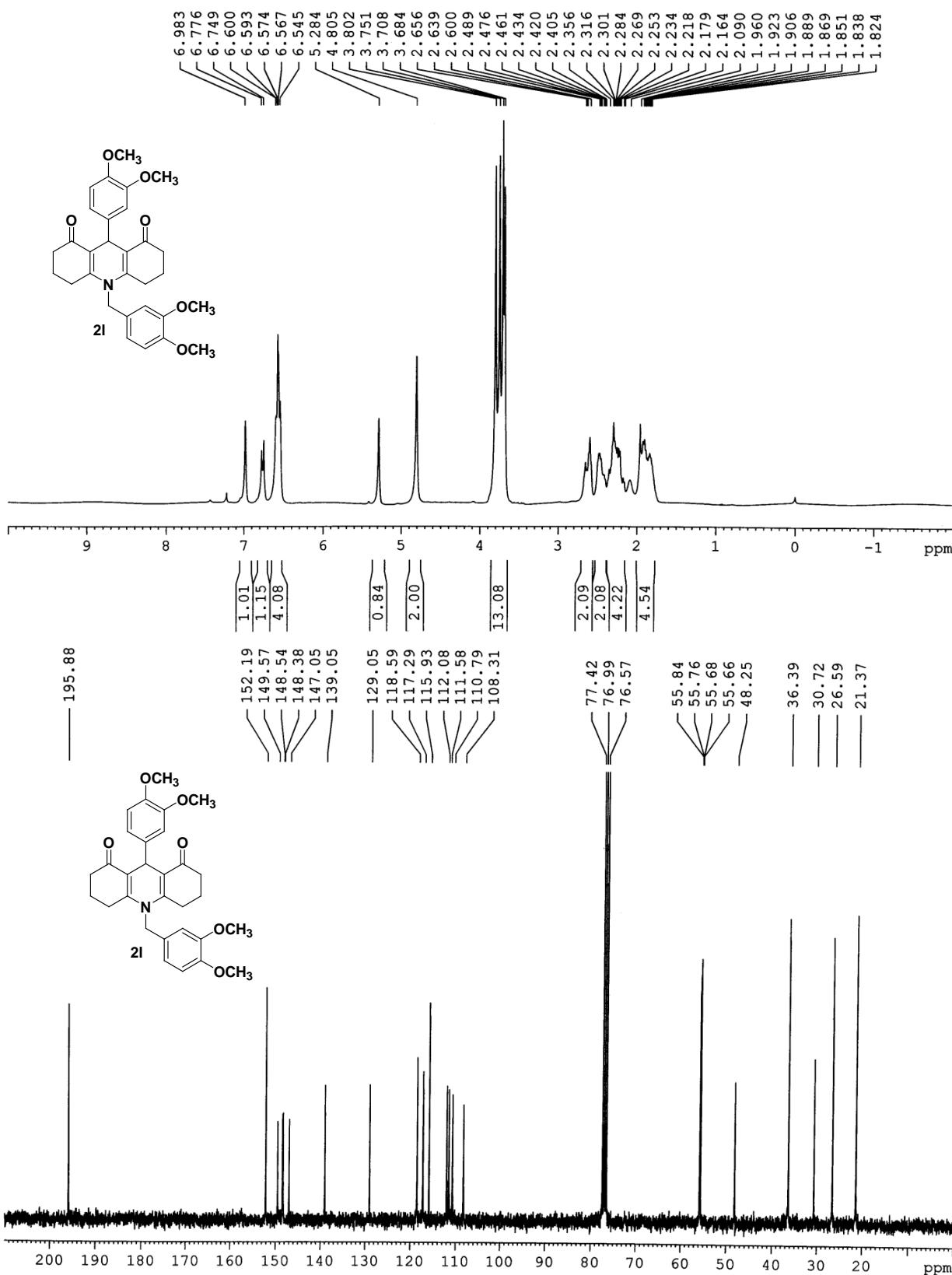
¹H NMR and ¹³C NMR spectra of **2j**



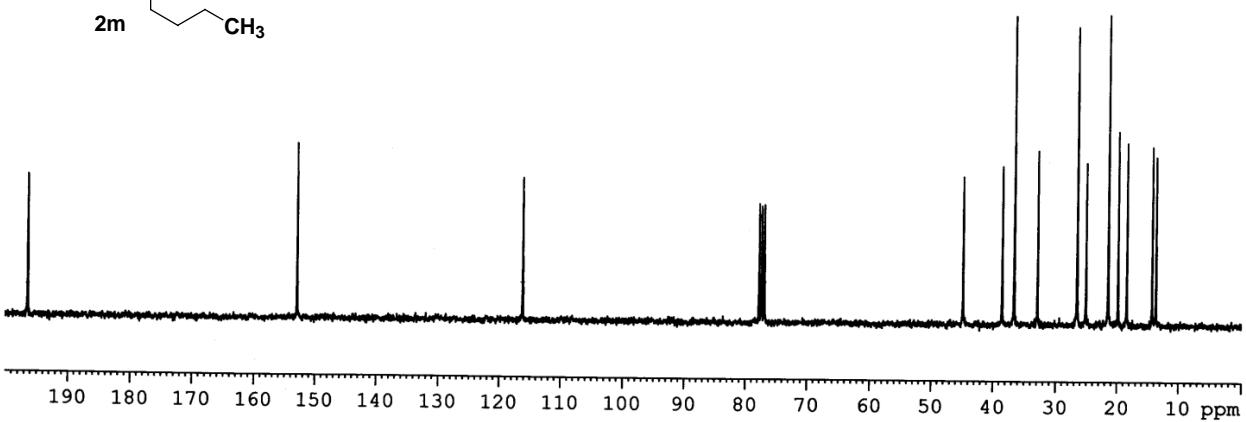
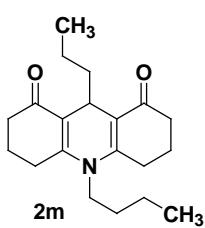
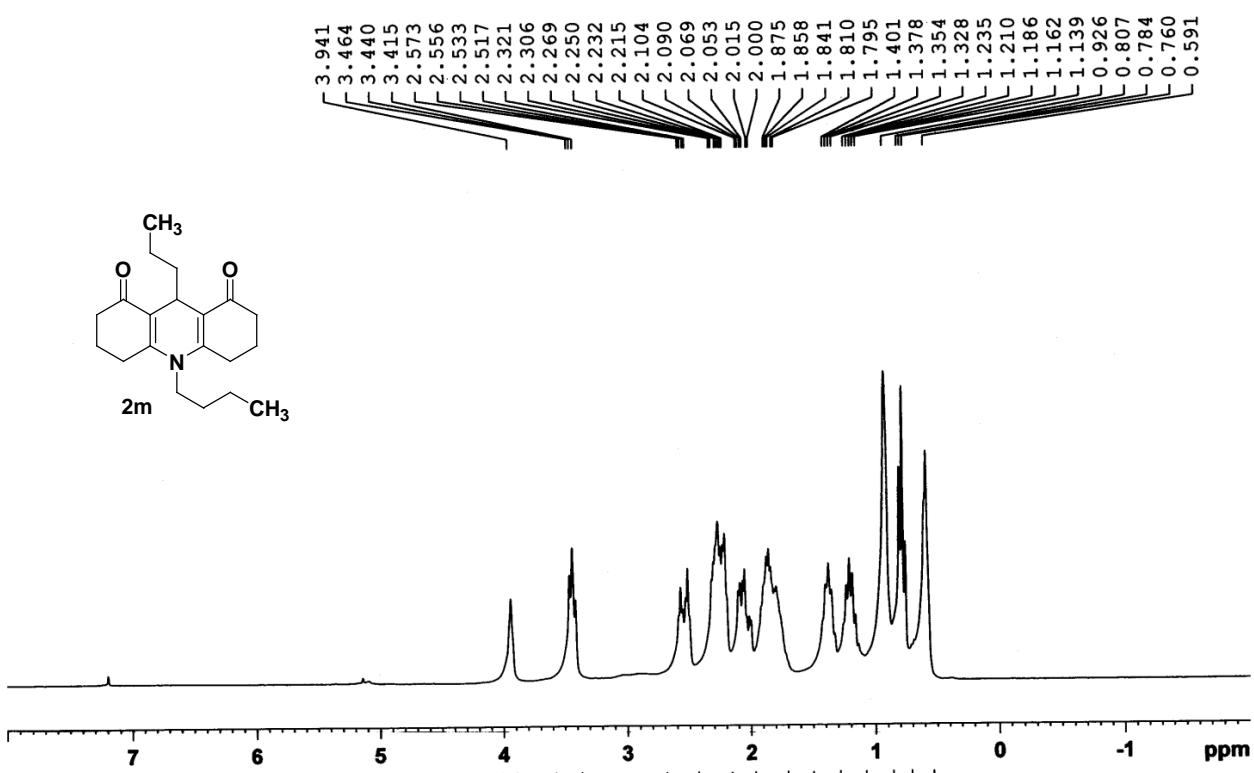
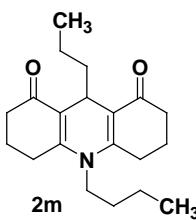
¹H NMR and ¹³C NMR spectra of **2k**



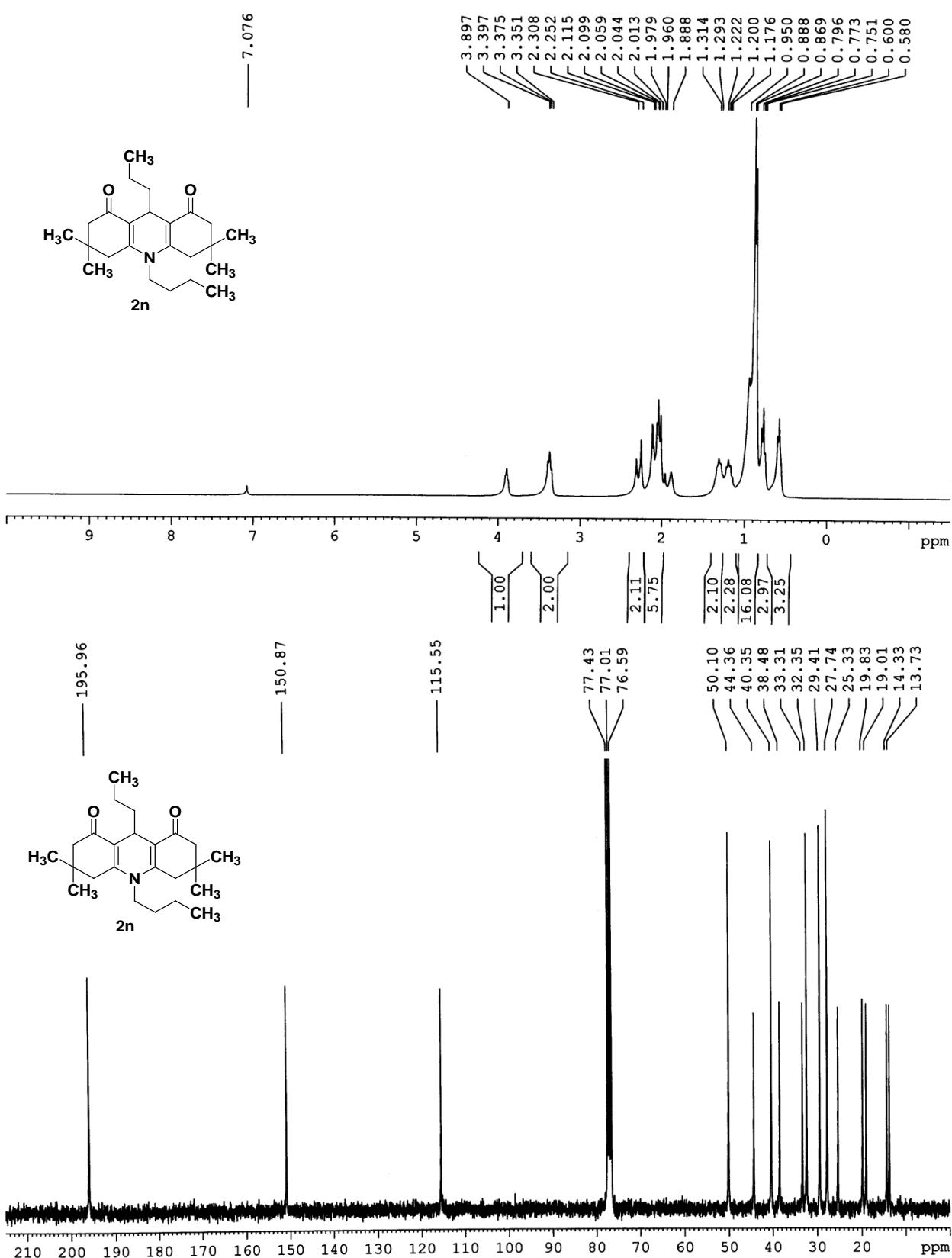
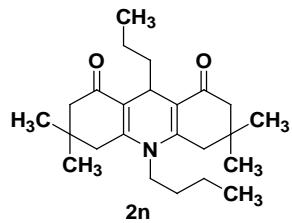
¹H NMR and ¹³C NMR spectra of **2l**



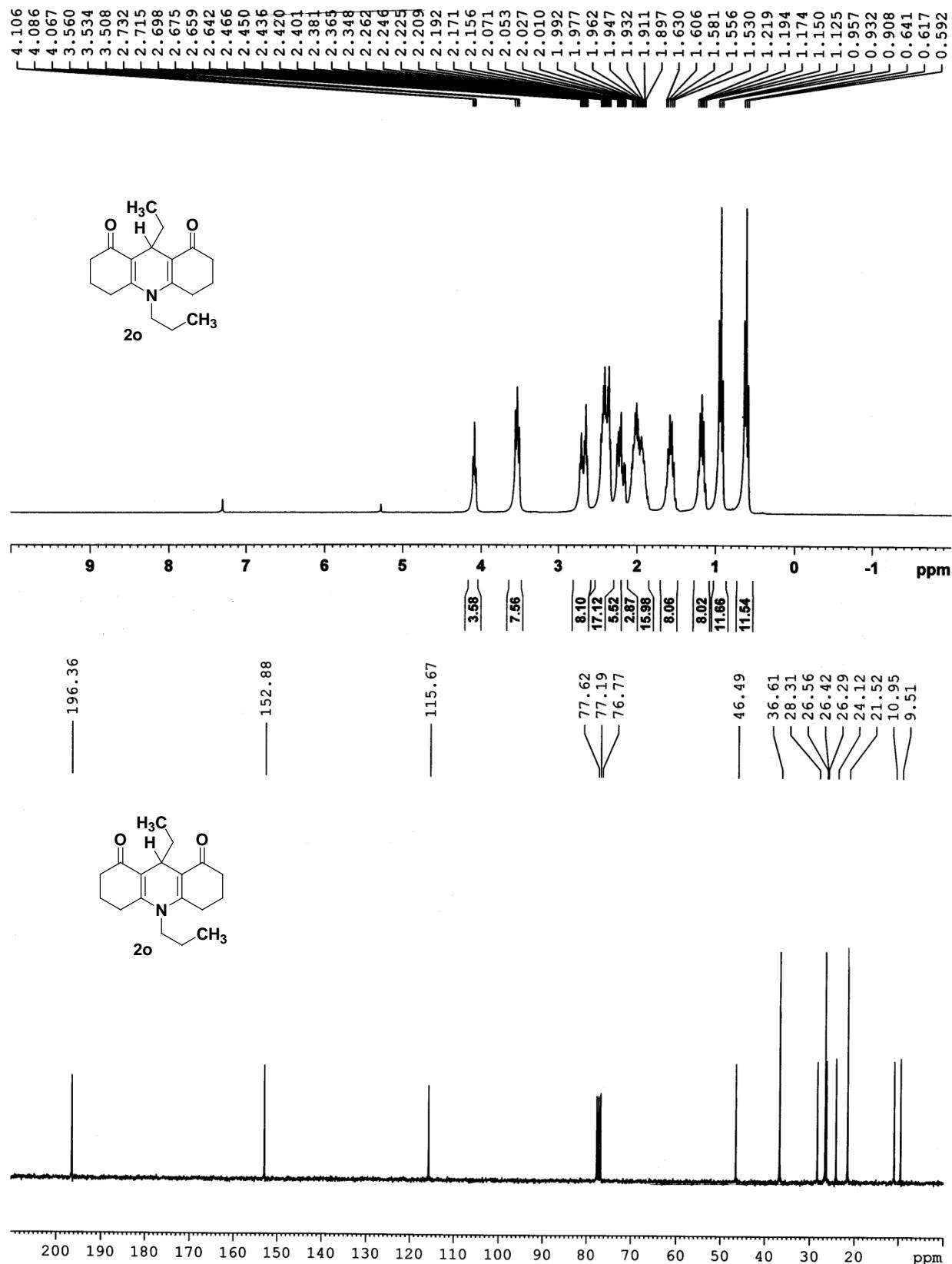
¹H NMR and ¹³C NMR spectra of **2m**



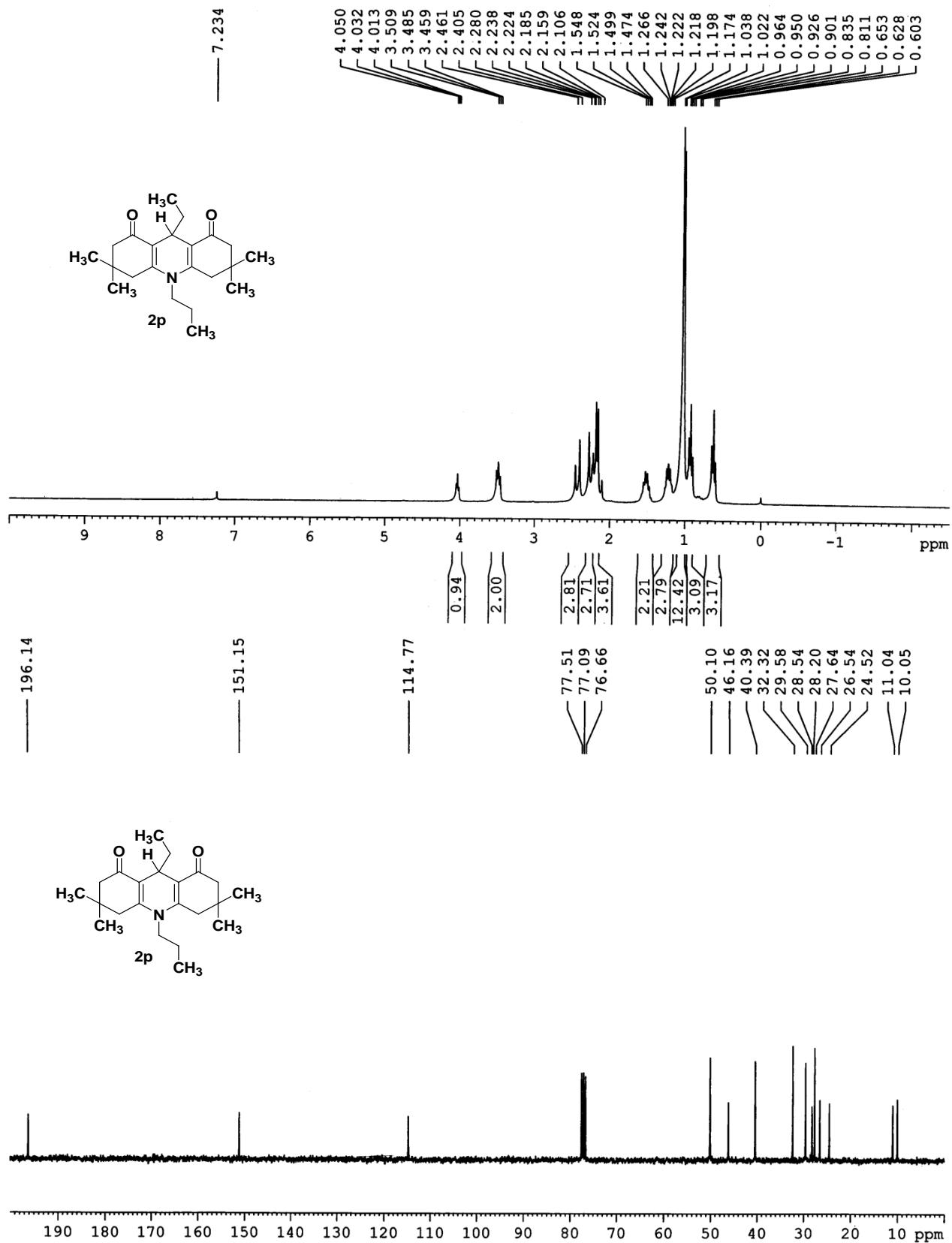
¹H NMR and ¹³C NMR spectra of **2n**



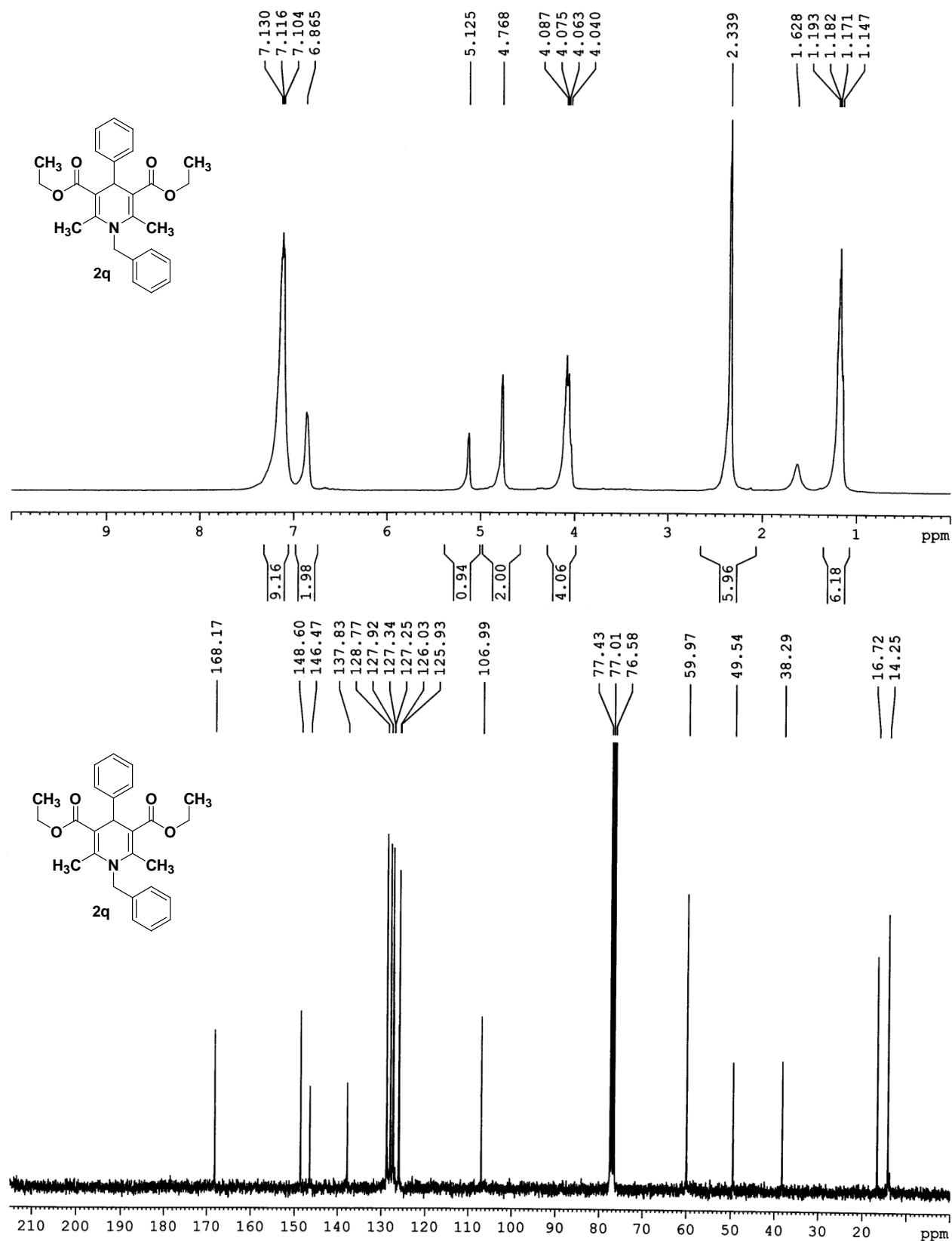
¹H NMR and ¹³C NMR spectra of **2o**



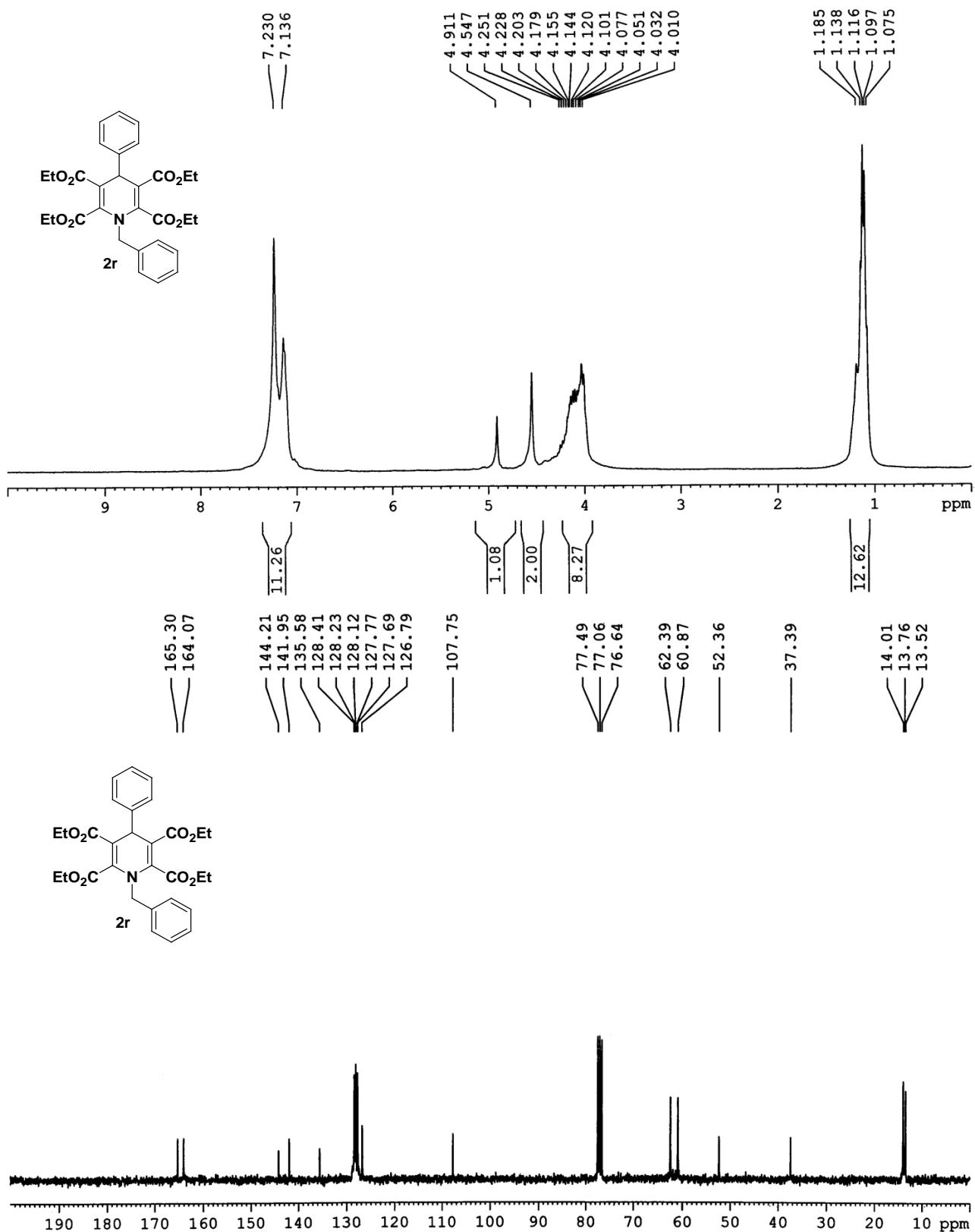
¹H NMR and ¹³C NMR spectra of 2p



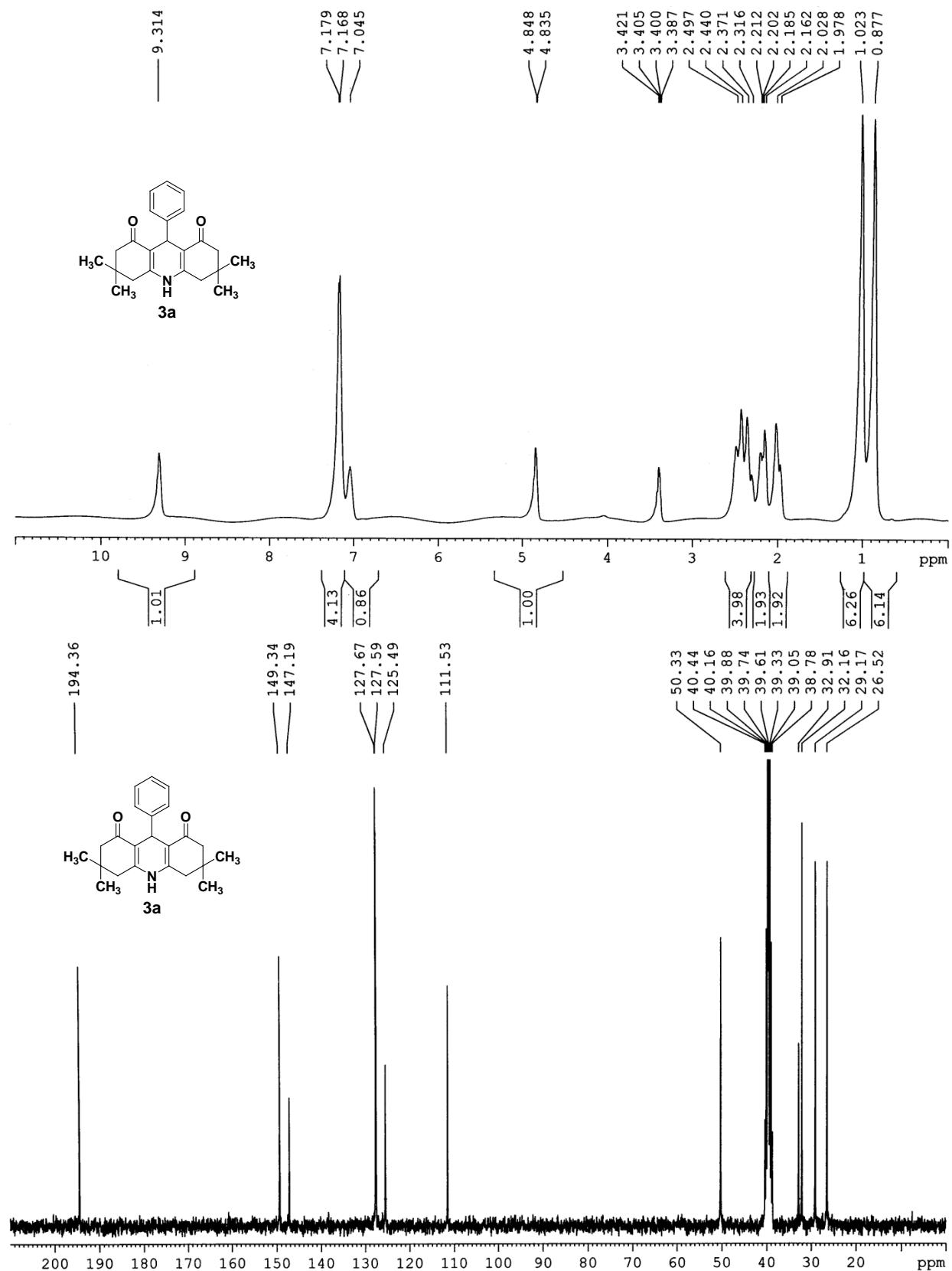
¹H NMR and ¹³C NMR spectra of **2q**



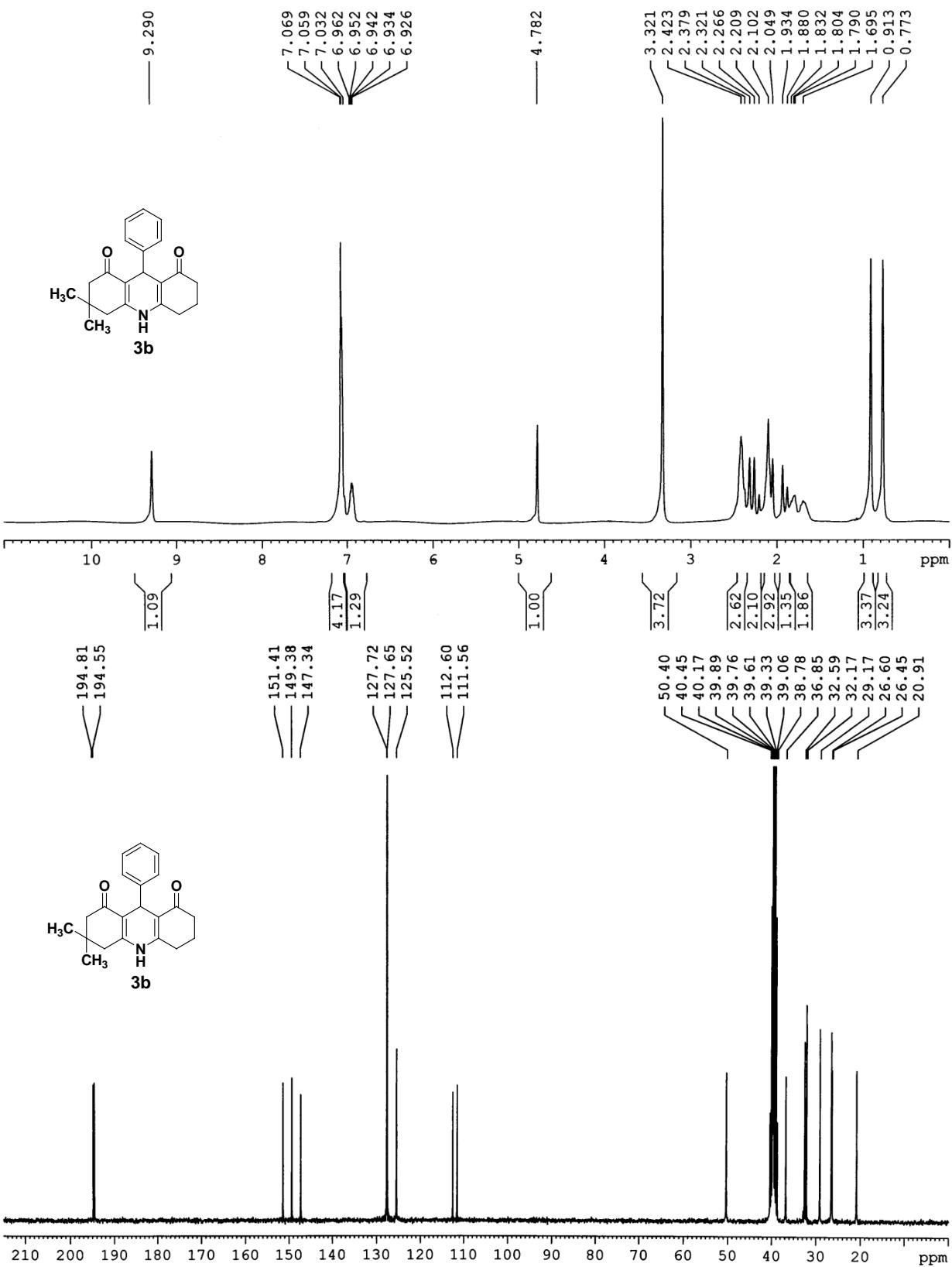
¹H NMR and ¹³C NMR spectra of **2r**



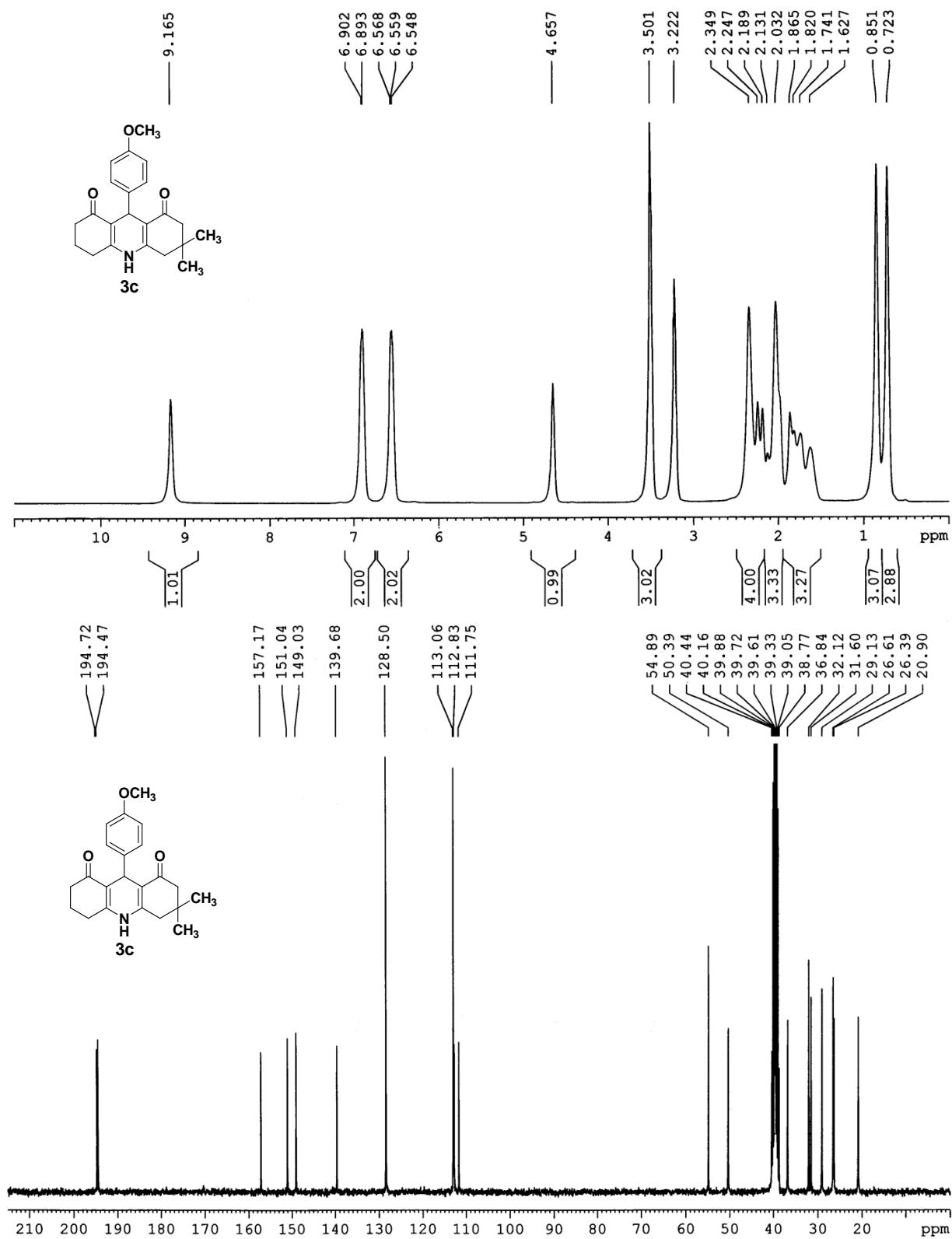
¹H NMR and ¹³C NMR spectra of **3a**



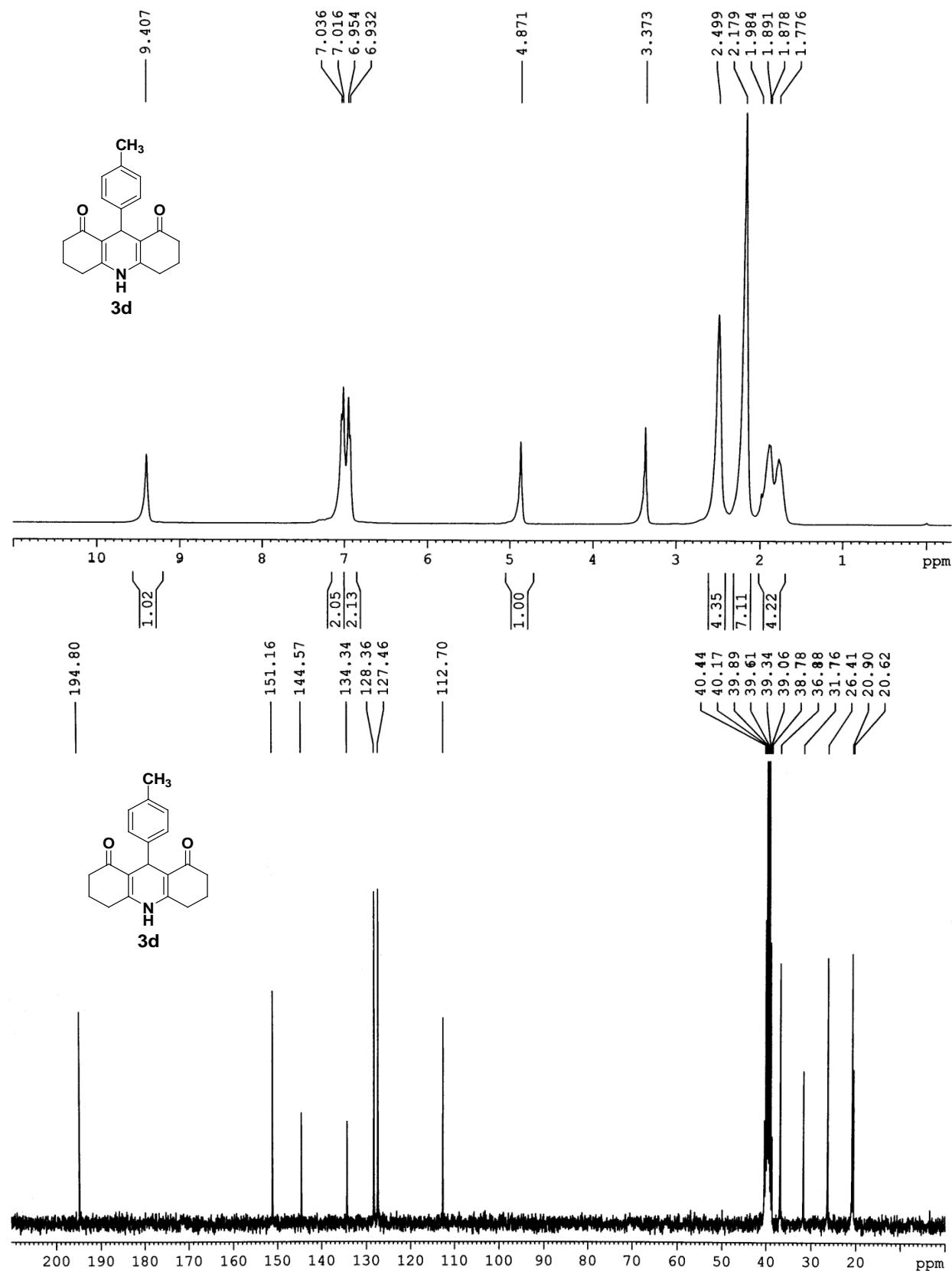
¹H NMR and ¹³C NMR spectra of **3b**



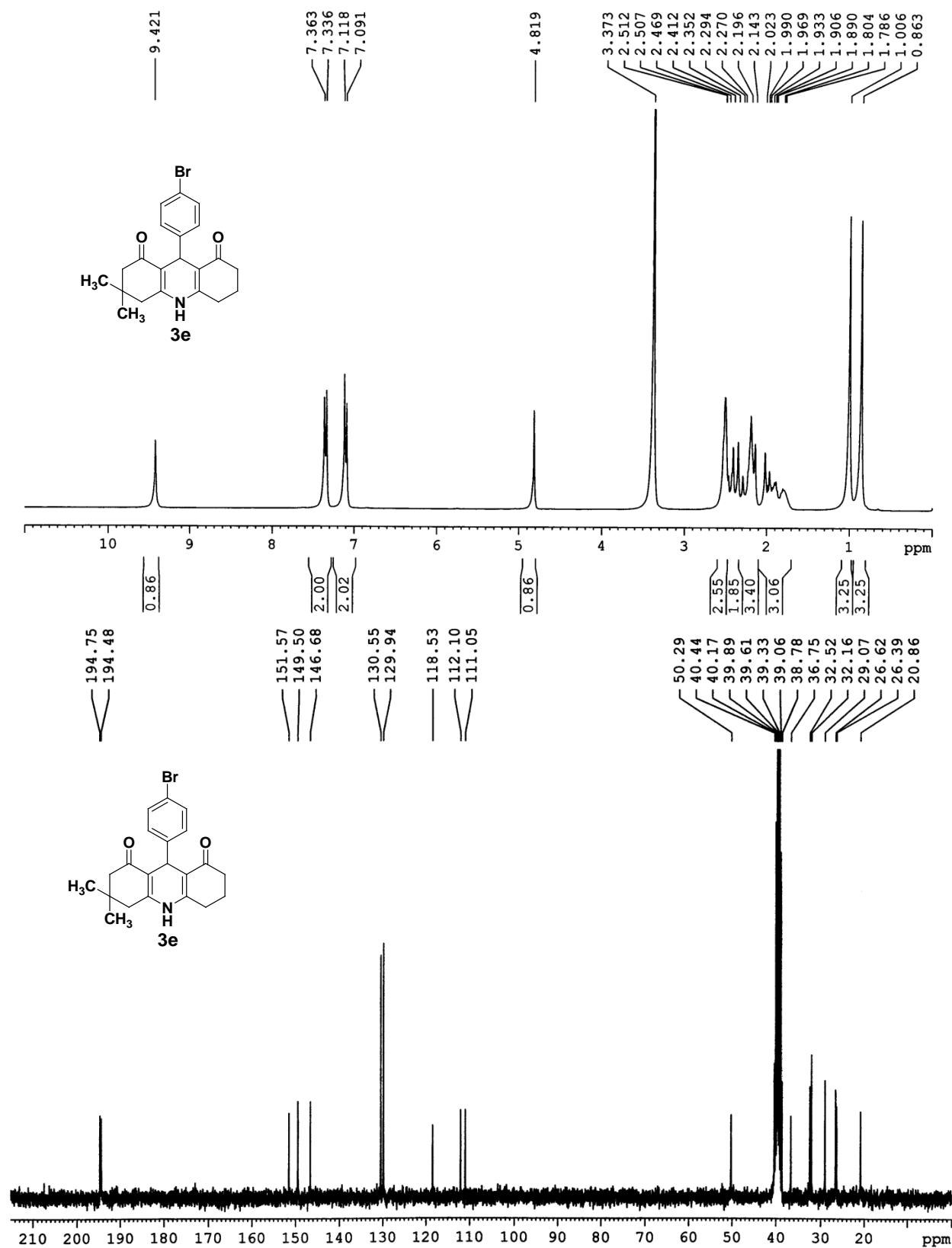
¹H NMR and ¹³C NMR spectra of 3c



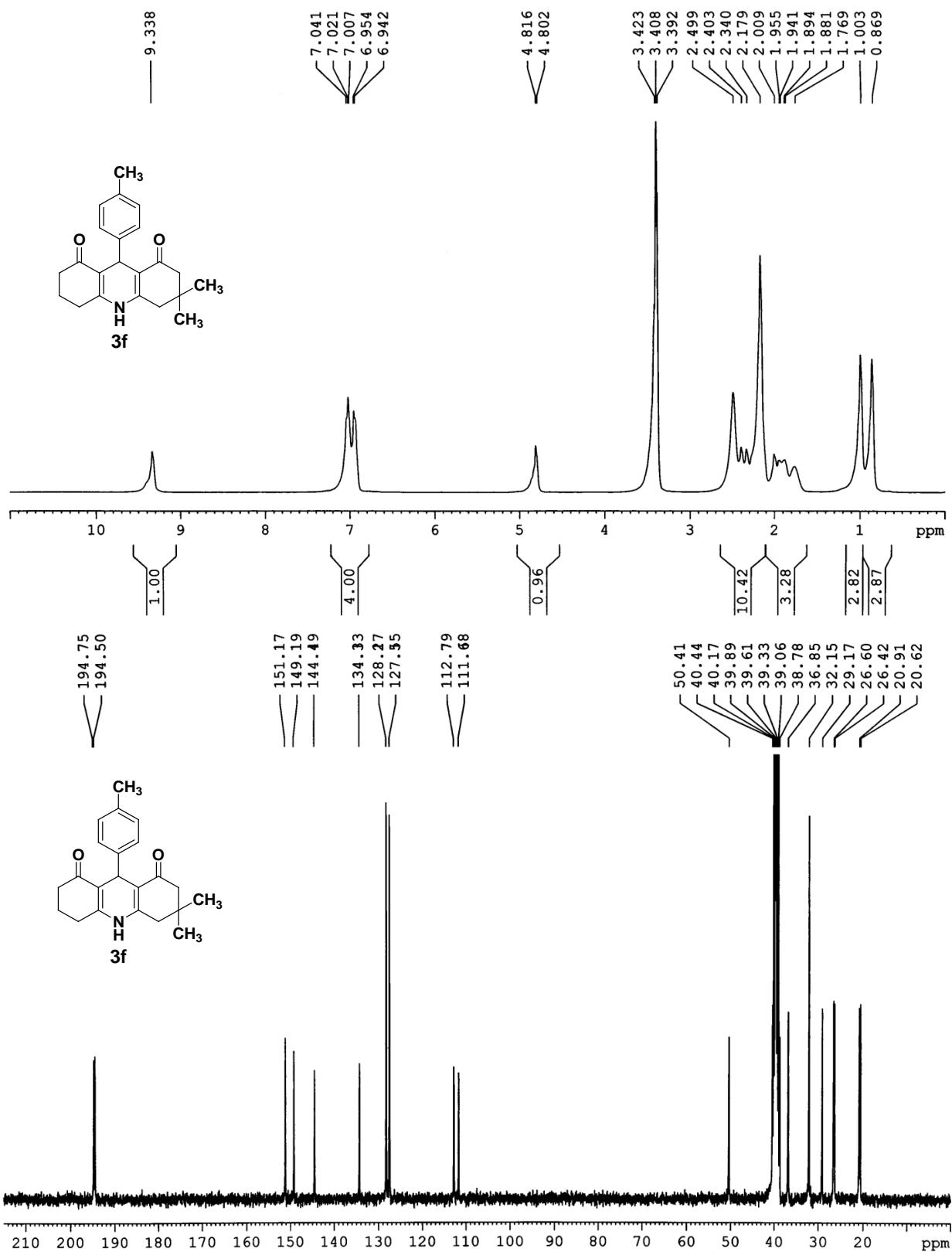
^1H NMR and ^{13}C NMR spectra of **3d**



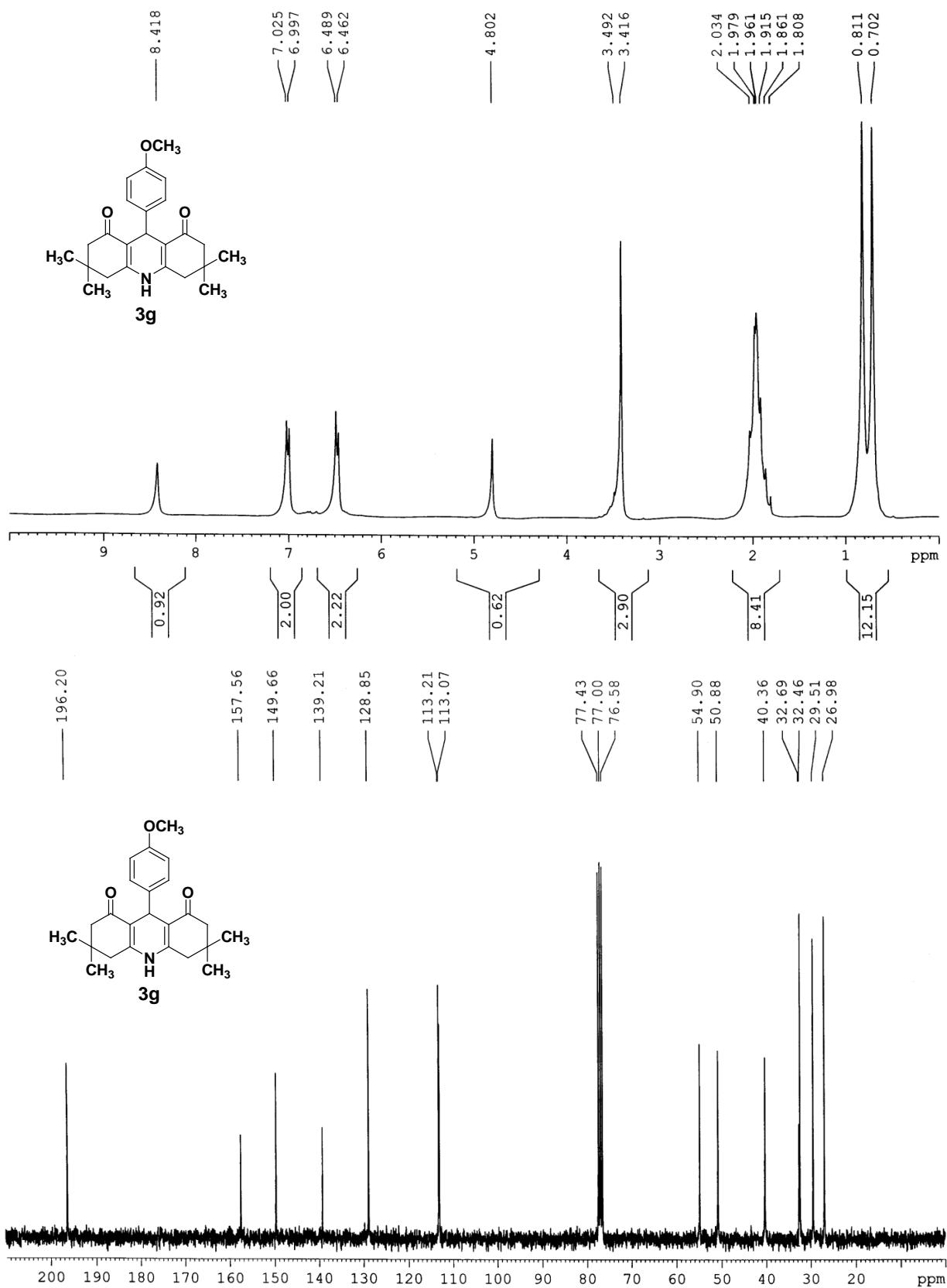
¹H NMR and ¹³C NMR spectra of **3e**



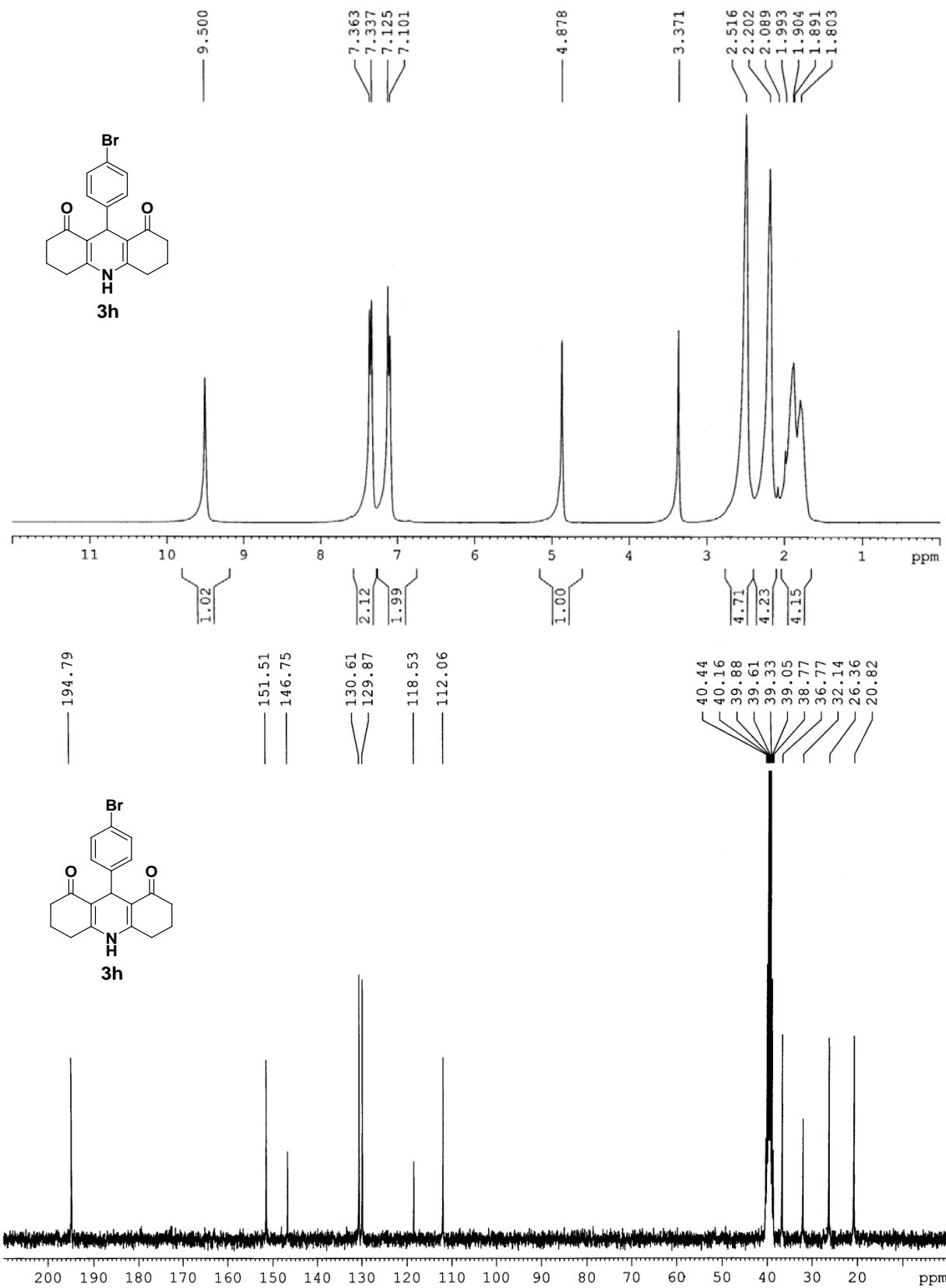
¹H NMR and ¹³C NMR spectra of **3f**



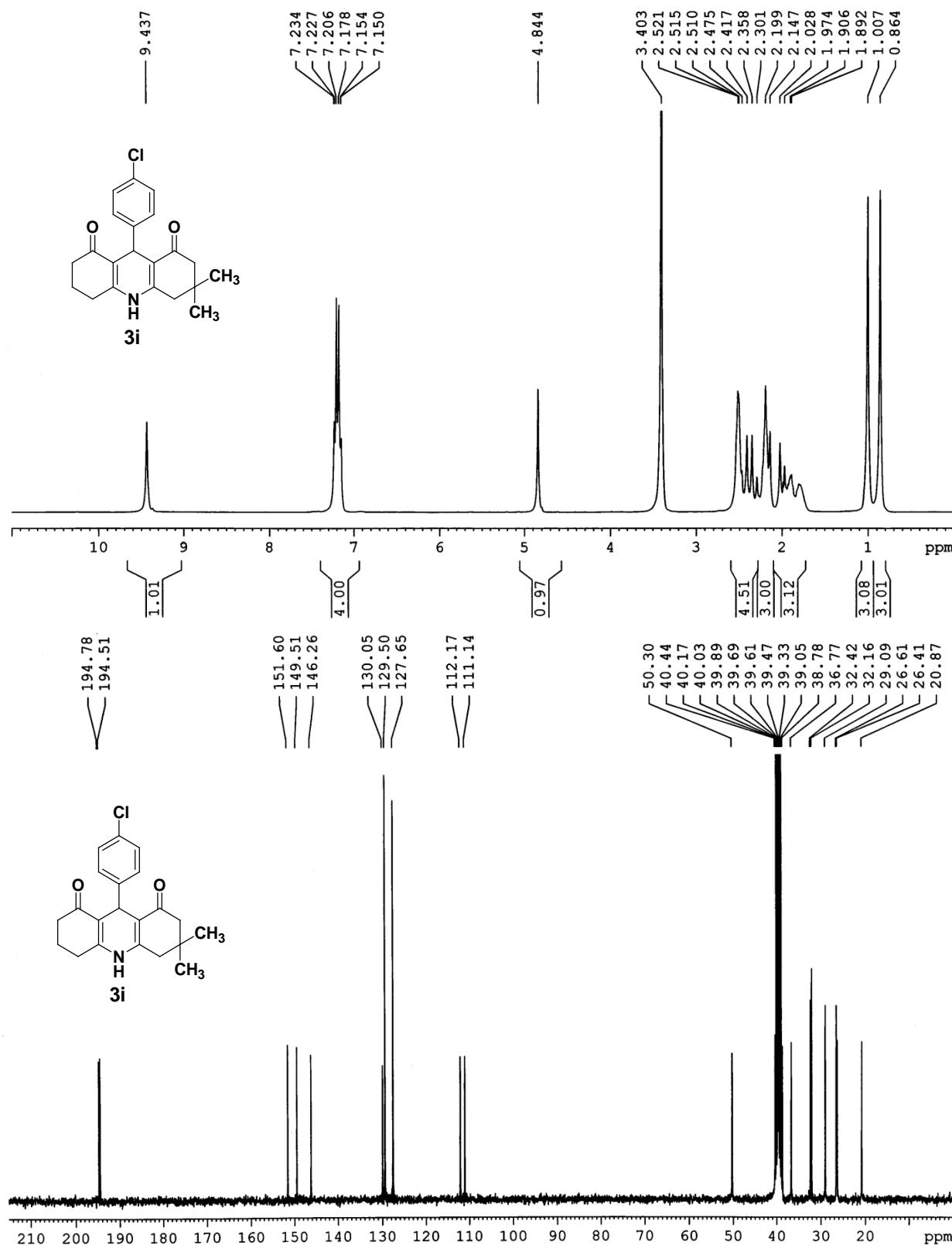
¹H NMR and ¹³C NMR spectra of **3g**



¹H NMR and ¹³C NMR spectra of **3h**



¹H NMR and ¹³C NMR spectra of **3i**



¹H NMR and ¹³C NMR spectra of 3j

